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ABSTRACT

Stage Two of the Title IV Quality Control Project is an evaluation of quality of the United States Department of Education's major student aid programs. The study sought to identify, measure, and analyze error during the 1985-86 academic year in each of the five major Title IV programs, including the Pell Grant program, the Campus-Based programs (consisting of the Supplemental Educational Opportunity Grant, National Direct Student Loans/Perkins Loans, and College Work-Study programs), and the Guaranteed Student Loan program. This executive summary describes the major components of the study and discusses the methodology, the key findings, and key corrective action recommendations. The study found consistently high rates and magnitudes of error in each program. Student misreporting of application information is a major cause of these high levels of error. Institutional error also continues to be a problem. The project identified three major areas for quality improvement: simplification of the delivery process, including a reduction in the number of data elements required for needs analysis; institution-based quality control; and structural changes to the delivery systems to integrate functions among programs and to provide central control over delivery system activities. (JDD)

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U.S. DEPARTMENT OF EDUCATION

TITLE IV QUALITY CONTROL PROJECT

CONTRACT NO: 300-84-0020

STAGE TWO
FINAL REPORT
EXECUTIVE SUMMARY

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AUGUST 1987

Advanced Technology

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TITLE IV QUALITY CONTROL STUDY

STAGE TWO

FINAL REPORT

EXECUTIVE SUMMARY

Submitted to

Division of Quality Assurance
Debt Collection and Management Assistance Service
Department of Education

AUGUST 1987

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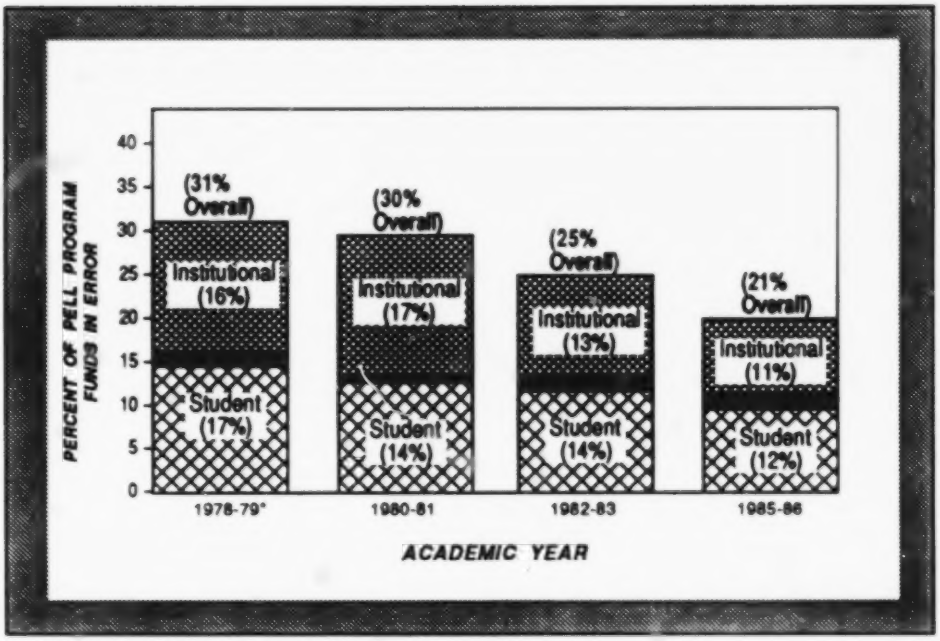
HIGHLIGHTS

The Department of Education (ED) has recently completed the Title IV Quality Control Study Stage Two, a study of quality in the Title IV student financial aid programs for the 1985-86 academic year. In response to concerted efforts to improve program quality, progress has been made in reducing the relative magnitude of error since the first quality control measurements were made in 1978-79. However, even with this reduction, hundreds of millions of dollars are being disbursed incorrectly to postsecondary students each year.

The magnitude and trend in error in the Pell Grant Program is illustrated in Exhibit 1. The error measured in the study went beyond regulatory violations, and included broad delivery system processes. Student error is defined as misawards attributable to the submission of incorrect information on students' application for financial assistance. Institution error is defined as misawards attributable to schools using incorrect data in awarding, processing, or disbursing aid or for not collecting necessary documentation. The dollar amounts of student and institutional errors are mutually exclusive.

The Stage Two study is the first such study to measure error in all five of the major Title IV programs. Consistently high rates and magnitudes of error were found in each program. For example, 54



* *1978-79 study used expected disbursements rather than actual.*
Total program funds on which error figures were based:

1978-79 = $1.1 billion
1980-81 = $2.2 billion
1982-83 = $2.4 billion
1985-86 = $3.6 billion

EXHIBIT 1. **ABSOLUTE STUDENT AND INSTITUTIONAL PELL ERROR AS A PERCENT OF PROGRAM EXPENDITURES**

percent[1] of Pell Grant recipients received incorrect awards. These mispayments totalled $763 million nationwide, or about 21 percent of all Pell Grant funds for that year. Seventy-seven percent of Campus-Based recipients had awards determined with incorrect data and 22 percent received awards in excess of need totaling $265 million. In the Guaranteed Student Loan (GSL) program, the amount of need certified by institutions was incorrect in an estimated 20 percent of cases. The resulting cost to the government is estimated to be $338 million over the life of the loans.

There are many reasons for these high levels of error. Student misreporting of application information is a major cause. For example, approximately one-third of all Pell recipients are estimated to have award errors due to their providing erroneous information on their applications for assistance. This may be due to confusing forms and processes, the use of prospective data, and intentional misreporting. Institutional error also continues to be a problem. For example, an estimated 30 percent of all Pell recipients received incorrect awards due to institutions using inaccurate data for such things as cost of attendance and enrollment status or for not collecting necessary information.

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[1]All error figures utilized a $50 tolerance.

This study, like the previous studies, used a broad definition of error. Error, for the purposes of the study, went beyond liability and included quality. The error figures do not imply any deliberate waste or fraud, nor should they be interpreted as placing blame on either students or institutions. Instead, the error figures relate the extent to which Title IV awards deviate from the intended distribution of awards. Much of the error is inherent in the error-prone nature of the Title IV delivery system, and should not be strictly interpreted as potential cost savings. However, this error-prone process undermines the very objective of increased equity.

These problems occurred despite ED corrective actions implemented since 1980 to reduce error. For example, improvements in the criteria and procedures for selecting and validating recipients have been made. Also, the proportion of Pell Grant applicants whose reported adjusted gross income, taxes paid, and Social Security benefits that must be verified through documentation was increased. Both of these activities, coupled with improved design of the student application for financial assistance were implemented in an effort to reduce student error. Additional initiatives have been instituted to reduce institutional error.

The corrective actions taken to date have focused on the individual data or procedure level. Error reduction has occurred in the individual data elements that were the target of the corrective actions. However,

error in several other items or procedures has remained constant or increased. (For example, a major corrective action focus has been post hoc verification of selected application data items. Verification has had a limited ripple effect on data items and applications not selected.) Stage Two analyses indicate that even under the most generous assumptions, the possibility for reducing error below a certain floor level using these types of corrective actions is limited. A significant amount of residual error remains, and will remain, unless long-term systematic improvements are implemented.

To make further meaningful improvements in quality, it is necessary to re-examine aspects of the delivery system itself and, where appropriate, change its structure. The Title IV Quality Control Project has identified three major areas for quality improvement:

- Simplification of the delivery process including a reduction in the number of data elements required for needs analysis;
- Institution-based quality control to place accountability and authority at the appropriate level to reduce error; and
- Structural changes to the delivery systems to integrate functions and data elements among programs and to provide central control over decentralized delivery system activities.

With respect to simplification, analyses conducted indicated that for both the Pell Grant needs analysis used to determine the Pell Student Aid Index (SAI) and the Uniform Methodology (UM) formula used to determine a student's Expected Family Contribution (EFC) in the Campus-Based programs:

- Reduced needs analysis formulae containing only six data elements closely approximate the "intended" distributions of need for Pell and Campus-Based aid and for GSL certification. "Intended" distributions were determined by using best values of application data in the current long-formula needs analyses.

- Most aid recipients would have minimal or no changes in their Pell Award, Campus-Based need, and GSL certification if the current needs analysis formulae were replaced with a reduced formula.

- Student error would decline dramatically under reduced needs analysis formulae.

One of the major findings of the Title IV QC study was that systematic institution-based quality control procedures are associated with lower rates of institutional error. For example, schools that regularly reviewed a sample of recipients for error and who used either manual quality control checks or other auxiliary quality control procedures (e.g., using auditors, using consultants, checking other offices, or interviewing students) had institutionally-caused errors for an estimated 19 percent of all Pell Grant recipients in 1985-86. By contrast, twice as high a percentage (38.5 percent) of institutional error was associated with Pell Grant recipients at schools with little or no regular quality control procedures in place. This argues for expanded support for a quality control initiative that places responsibility for error management at the institutional level.

Finally, the continued high error rates since 1978-79 indicate that structural changes to the delivery systems are needed. One product of

the Title IV QC Study is a paper entitled Delivery System Quality Improvements. This paper establishes a comprehensive framework for analyzing and recommending specific long-term quality improvements to the delivery of Title IV assistance. These quality improvements include an integrated needs analysis structure and decentralized, integrated processors controlled through a central data base and a central disburser.

In summary there is a pattern of decreasing error magnitude in the Title IV programs over the last decade. Much of this is probably related to improvements in the quality of specific data items and procedures targeted by corrective actions. There remains, however, a large amount of residual error, not accessible through current means. What is needed is long-term action targeted at delivery system quality, including the simplification of data and procedures, institutional level quality control, and improvements in the structure by which student aid is delivered.

1.0

INTRODUCTION

Stage Two of the Title IV Quality Control Project is the first comprehensive evaluation of quality in the Department of Education's (ED) major student aid programs. As such, the purpose of the study is to identify, measure, and analyze error during the 1985-86 academic year in each of the five major Title IV programs, including the Pell Grant program, the Campus-Based programs (consisting of the Supplemental Educational Opportunity Grant, National Direct Student Loan - renamed Perkins Loans by the reauthorization of the Higher Education Act - and College Work-Study programs) and the Guaranteed Student Loan (GSL) program. This document will briefly summarize the major components of the study and will discuss the methodology used, the key findings of the study, and key corrective action recommendations.

1.1 STUDENT AID PROGRAMS

Five major Federal programs of financial assistance to post-high school students have evolved from legislation of the 1960's and early 1970's. Collectively, these five programs are known as the "Title IV" programs after Title IV of the Higher Education Act (20 USC 1070a, b, 1071, 1087aa, 2751; and 42 USC 2751) which, as amended, provides the legislative authority for them.

The Pell Grant (formerly BEOG) program is an entitlement program for undergraduate students, designed to be the foundation upon which all other Federal, state, and private aid builds, and was implemented in academic year 1973-74. Eligibility for the program is determined through a nationally uniform financial eligibility test, called the Family Contribution Schedule, developed by ED and approved by Congress every year. Currently, awards range from $200 to $2,100 for full-time students, and are reduced proportionately for part-time students.

Each of the three Campus-Based programs is administered by participating postsecondary institutions. Each participating institution applies annually for subsequent year funds, and reports prior year activity on the "Fiscal Operations Report and Application to Participate in Federal Student Financial Aid Programs" (FISAP). The Campus-Based award process perhaps best demonstrates one of the major differences between these programs and, for instance, the Pell program. Individual institutions are free within the regulations to establish the parameters within which Campus-Based aid is awarded. Financial aid administrators at these institutions award Campus-Based funds in conjunction with other programs to meet student need as determined by an ED-approved need analysis procedure, most often the Uniform Methodology. Campus aid administrators tailor awards to meet this need according to available funds and the institutional aid packaging philosophy. This aid packaging philosophy may dictate the sequence, amount, or type of aid given and the percentage of need met for different types of students.

The Guaranteed Student Loan Program (GSL) provides the most financial assistance to postsecondary students of all Title IV programs. It makes available to students attending eligible postsecondary institutions loan funds with which to meet educational expenses. The program uses capital provided through private sector banks, savings and loan associations, credit unions, and educational and other financial entities. The Federal government subsidizes these loans through "special allowances" to lenders in order to increase lender yields to provide a more equitable return. In addition, the government pays the full interest on borrowed amounts when students are in school, in a "grace period," or during periods of deferment. To receive a Federally-subsidized GSL, students must meet general eligibility criteria, similar to other Title IV programs, and also demonstrate financial need.

Students are responsible for repayment of loans after ceasing at least half time enrollment and after a brief grace period. During repayment, students pay both the principal and interest, while the Federal government continues to pay the "special allowance," the difference between the interest rate charged (7, 8, or 9 percent) and the prevailing interest rate for Treasury bills, as well as providing for a 100 percent guarantee to lenders against default. The maximum repayment period is 10 years.

1.2 QUALITY CONTROL IN STUDENT AID PROGRAMS

A series of quality control studies have been conducted by ED in the past. However, each focused only on a single program, such as the Pell

Grant Studies, or developed and pilot-tested a methodology for measuring error in one or more of the programs, which was the purpose of Stage One of the present study. These prior studies produced data that provide important reference points for the present study.

The previous studies have continually raised issues concerning improving the quality of the Title IV delivery systems. Historically, ED's quality strategy has principally relied upon verification of student-reported data items, audits and program reviews of institutions, conducting national studies of the magnitude and sources of error, and designing corrective actions aimed at individual data items. These have generally been mechanical solutions which have maintained the status quo.

In recent years, however, there has been a consensus emerging that quality improvement strategies and tactics should focus on changes to the Title IV delivery system itself. These larger aspects include changes made to the delivery systems during recent reauthorization of the Higher Education Act, as well as the Institutional Quality Control Pilot Project (IQCPP) currently being tested by ED to assess the feasibility of implementing a quality control system at institutions and assessing its effectiveness.

1.3 HISTORY OF ERROR IN STUDENT AID PROGRAMS

Despite an excellent record of identifying, quantifying, and making management improvements to diminish error, postsecondary institutions are still observing considerable discrepancies in the awarding of student

financial assistance. Since the first nationwide study of error in the Basic Grant (now Pell Grant) Program in 1978-79, considerable attention has been placed on lowering the rate and magnitude of error. Increased validation of student application data, forms and procedural redesigns, institutional quality control (QC) programs, among other activities, have been shown to be effective in removing some error.

Through the growth and maturation of the Title IV programs, quality has become an increasing concern, and will continue to be a concern of all those involved including Congress, ED, institutions, and students. The delivery systems are complex in nature and contain many aspects that are inherent obstacles to quality including some data items used by the system to determine awards. The trend in error rates has shown that error continues to be significant in the Title IV programs.

The Department is now faced with a critical choice. One option is to accept the status quo and continue to implement technical improvements to the student aid delivery process and accept an error rate of 15 to 20 percent discrepantly awarded recipients. The second option is to embark on major, structural, changes to the delivery system in an effort to reduce error systematically without changing the basic intent of the programs themselves (i.e., equity, access, and cost-effective service). The current delivery process exists because of the complexities of providing billions of dollars to students with varying amounts and types of needs. Making structural changes to that delivery process will require serious thought, planning, and coordination so as not to disrupt

payments. The task before ED is very clear. In order to reduce error appreciably, the current delivery system must be restructured (through redesigning and simplifying the current process) to design error out of the system and reduce the need for costly inspection. This restructuring can and should occur without significantly changing the intent of the programs, only the manner in which they are implemented.

1.4 TITLE IV PROJECT SUMMARY

In January 1984, the Office of Student Financial Assistance (OSFA) of the U.S. Department of Education (ED) contracted with Advanced Technology, Inc., of Reston, Virginia, to conduct a two-stage study of the five principle student aid programs funded under Title IV of the Higher Education Act. Advanced Technology engaged Westat, Inc., of Rockville, Maryland, to perform field work and provide technical assistance in special areas such as sample design.

Stage One of the Title IV Quality Control Project, conducted during 1984, was designed as a "pilot study." The pilot study was restricted to the Campus-Based and GSL programs since three field studies of the Pell Grant program had already been done.

The design of this study, Stage Two of the Title IV Quality Control Project, was based on four overarching objectives:

- To determine whether the level and patterns of error persist in the Title IV programs and assess any interactive effects.

- To assess the effects of prior ED corrective action initiatives.

- To measure structural error (i.e., error not amenable to standard corrective actions).

- To describe the effects of proposed major corrective actions on improving quality in the delivery of Federal student aid.

Stage Two is the first study to measure error across all the major Title IV programs, and provides an opportunity to monitor the effects of corrective actions already in place or recently added to any of the programs as a result of recommended corrective actions from Stage One or the earlier Pell Stage Three Study.

2.0

METHODOLOGY

In this chapter we present a brief description of the methodology used in conducting Stage Two, including its focus, data sources, error definitions, sampling, data processing procedures, and analyses.

2.1 FOCUS OF STAGE TWO

As mentioned earlier, the Stage Two study of error is the first study to be conducted by ED that is integrated across the Title IV programs. Because of this aspect of the study, many interactive effects of error, and interactive analyses, can be simulated and estimated.

The basic methodology for this study has been employed numerous times in previous studies of the student financial aid programs. Hence, the results of the current study provide an opportunity to compare data gathered from the previous Pell studies and confirm data from Stage One for the Campus-Based and GSL programs. Like the previous QC studies, Stage Two measured error according to a broad definition, not a more restricted definition agreeing with regulatory liability. Thus, the focus of the study was to analyze the extent and causes of incorrect awards and not to place blame on students or institutions.

Data for this study were collected from three major sources: the institutions, the students and their parent(s), and external sources

which could verify data obtained from the students and their parents. (Exhibit 2-1 depicts these data sources graphically.) Each of these data sources provide important documentation for the study and are described briefly below. In addition, data on Pell recipients were abstracted from the Computed Applicant Record (CAR) maintained by the Pell central processor.

- An Institutional Questionnaire (IQ) was administered to the financial aid administrator during an interview at each sampled institution. One of its major purposes was to obtain information on institutional policies and procedures. This information was used to determine each student's correct need, calculate error, identify institutional characteristics correlated with error, and gather information on quality control practices. The IQ data were collected in February and March of 1986.

- Field data collectors abstracted student data from institutional files during the institutional visit. Data for each sampled student were abstracted in the following areas: general eligibility, Pell Grant program data, Campus-Based program data, GSL program data, documentation contained in the student's files, and disbursements and repayments/refunds. These data were abstracted from institutional files in February, March, and April of 1986, which enabled ED to ensure that student changes, drops in enrollment, changes in need, and subsequent award adjustments were captured and hence error data were not artificially inflated. The QC study methodology has shown that end-of-year clean-up of student files produces no significant changes and has virtually no affect on nationwide error estimates.

- A Student Questionnaire (SQ) was administered to students during personal interviews, and was designed to confirm or verify data reported on the aid application completed by the student. A questionnaire was administered to parents (PQ) for similar purposes. However, if the dependency status of an independent student was confirmed in the parental interview, further questions were omitted. SQ and PQ data were collected in March, April, and May of 1986.

- Students and parents provided written permission for the release of Federal tax forms and verifying the value of savings and checking accounts. This permission was obtained

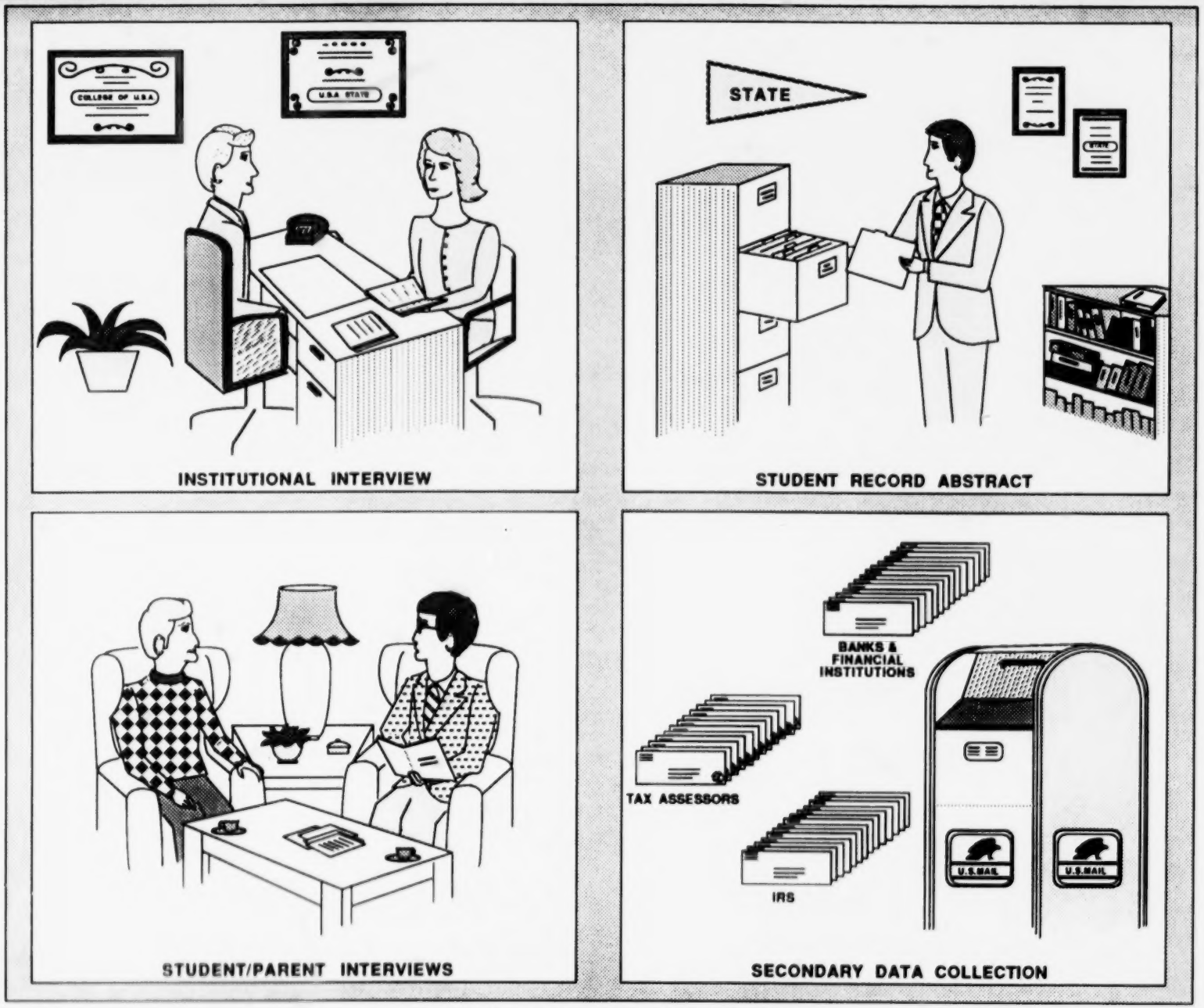

EXHIBIT 2-1 STAGE TWO DATA SOURCES

during the student and parent interviews. For a sample of the schools, local tax assessor's offices were contacted for respondents reporting home ownership, to ascertain the approximate market value of the respondent's home or primary residence. Data from secondary sources were collected in March, April, and May of 1986.

2.2 ERROR DEFINITION AND MEASUREMENT

Our approach to error definition and error measurement in Stage Two, as in prior studies, defined error as the difference between need or award calculated using data reported by the student and/or used by the institution and the most accurate and reliable data obtained during the course of data collection. In the absence of such confirmatory data, for any given item, the value reported by the student was accepted and used for analysis purposes as the best value.

Stage Two is unique in that it measures errors in all five (Pell, three Campus-Based programs and GSL) Title IV programs. Therefore, measurement of error in the Pell, Campus-Based, and GSL programs required the use of several conceptually distinct error definitions due to the unique characteristics of each program.

Pell Error

In the Pell program, a change in a reported data element (e.g., AGI) will have a known effect on the applicant's Pell Grant award at a given enrollment status and cost of attendance. Thus, such changes, and therefore error, could be modeled precisely because Pell is a

formula-driven, entitlement program. Pell payment error is a measure of differences in students' Pell Grants using actual and best data.

Campus-Based Error

The characteristics of the Campus-Based programs required a distinct and different approach to defining and measuring error. Need analysis performs a function much like the Pell formula. However, the result of need analysis does not determine an award, but is used by institutions as an input to determine a student's Campus-Based award. Thus, the effect that changes in student reported data had on awards could only be estimated. Because of the nature of the Campus-Based programs, the following three error measures were required to describe the quality of the Campus-Based programs:

- **Campus-Based need error** is a measure of the discrepancies in calculating students' need (the difference between resources available and resources required to finance postsecondary education).
- **Campus-Based awards in excess of need** is a measure of the extent to which need errors caused students' need to drop below award. Because most students have some amount of unmet need, not all need errors (where need drops) will cause awards in excess of need. This error measure approximates the regulatory definition of error.
- **Campus-Based distributional error** converts need errors into likely award consequences using institutional packaging algorithms. Distributional error is probably the best overall indicator of quality in the Campus-Based programs.

GSL Error

Measurement of error in the GSL program presented other methodological problems. Institutions, one of the major foci of the

study, play a limited role in the program: certifying the amount for which a student is eligible. Program limits, students who apply for specific amounts, and lenders and guarantee agencies jointly determine the actual loan amount. Often, institutions may not know the exact loan amount, or if the student even completed the loan process and received a loan. Therefore, the focus of the study was on error at the point of certification. (Changes made during reauthorization of the Higher Education Act now involve the schools directly in the disbursement of GSL funds.) Guaranteed Student Loan certification error is a measure of the overcertifications when best data are substituted for reported data. Certifications are capped at the program limits of $2,500 for undergraduates and $5,000 for graduate students.

Error measures in each of the Title IV programs were decomposed into three types of error: student reporting error (which is used to motivate corrective actions rather than assign responsibility), institutional error, and overall error. The definitions are as follows:

- **Student reporting error** is the result of recipients providing inaccurate data at the time of application and subsequent to it. This decomposition is silent on whether the error was conscious or inadvertent or whether it was true at the time and subsequently changed.
- **Institutional error** is the result of institutions using incorrect data and making errors that affect student need.
- **Overall error** is the total result of incorrect student reporting and institutional errors in handling data, categorical errors, or procedural errors.

These errors were decomposed further to identify key individual or groups of errors as a basis for corrective actions analysis. Although all error measures are quality errors, some include true regulatory violations. Analysis indicates that regulatory violations are of significant volume.

2.3 SAMPLING

The data for this study were collected from samples of Pell Grant and Campus-Based recipients and GSL certifications at 297 sampled institutions participating in these Title IV programs. The sampling was conducted in two stages:

- A random sample of institutions participating in the Pell Grant, Campus-Based, or the GSL program was selected first.
- Random samples of Pell Grant and Campus-Based recipients and GSL certifications were selected at each institution.

The sample design sought a combined Pell, Campus-Based, and GSL sample of 3,200 students; however, actual sampling yielded 2,996 student cases. After the two major phases of data collection (parent and student interviews and student record abstraction) 2,472 cases contained data sufficient to calculate fully the various error measures. All findings were adjusted for nonresponse and weighted to permit program-wide estimates. The interview response rate for all sampled students and parents was 87.3 percent. National data estimates are generally within 10 percent, yet some variation exists. The actual coefficients of variation are contained in Procedures and Methods, a separate volume of this report.

2.4 DATA PREPARATION AND PROCESSING

All data collection instruments were received in hard copy form. The preparation and processing of data collected in the field by both Advanced Technology and Westat required a number of steps and operations in order to produce a set of clean data tapes ready for analysis. The data were subjected to a series of stringent quality control checks both before and after keypunching.

Once the files passed these tests, and were determined to be clean and ready to be used in the analysis, Advanced Technology performed the necessary merging of these data files to produce a complete master file for Stage Two.

Analysis of data to identify and measure error involved numerous steps. The first step was selecting the most relevant or reliable data source or "best value" for each student, parent, and institutional data item required for recomputation of awards and analysis.

The multiple data sources used in the study mean that many different values emerged during the course of checking on application values of students and parents. If these values were consistent, best value selection was a simple matter. If these values differed, however, a method was required to determine the best value. The best value was the one that was documented and came from the most reliable source. This was determined by merging the data from the various sources and selecting the

best value using a computer program designed for that purpose. In all cases, however, the program defaulted to the value reported by the applicant if more reliable data were not available. Numerous internal quality control checks were implemented to ensure the accuracy of the data and the procedures used to make the error estimates presented in this report.

Many different types of analyses were performed for the study. These included descriptive tables, cross-tabulations, chi-square analyses, frequency distributions, and logistic regression analyses. Where appropriate we have made comparisons between this study and previous quality control studies.

3.0

FINDINGS OF ERROR

This chapter presents a summary of the Findings report for the Stage Two study. The data presented in this chapter, along with the more detailed data presented in Findings, show the magnitude and sources of error in the Title IV programs. Several levels of error are presented, from the most aggregated data at the program level to detailed data by student application item and institutional procedure. We also present data in this chapter that summarize our findings of error with respect to characteristics that were associated with student and institutional error, as well as institutional quality control procedures and validation.

3.1 ERROR IN THE PELL PROGRAM

The Stage Two study found error in the Pell program to be reduced from 1982-83, but still high at all levels. Our estimates show that absolute overall error averages $502 per recipient with error, and totals $763 million, or 21 percent of total program funds awarded. Fifty-four percent of Pell recipients have either been given too large or too small a grant. In composite, nationwide these errors totalled $585 million in overawards and $178 million in underawards. These data are summarized in Exhibit 3-1.

Error estimates for Stage Two and for Pell Stage Three are presented in Table 3-1. In both studies, there were approximately 50 percent of Pell recipients with error. The percentage of program funds awarded in

ABSOLUTE ERROR

Error	Program-Wide Estimate ($ Millions)	Program-Wide Estimate (% of $ Awarded)[a]	Mean Error per Recipient ($)	Cases w/Error[b] (%)	Mean Error per Recipient w/ Error ($)
Institutional	386	11	138	30.0	460
Student	439	12	157	32.3	486
Overall	763	21	273	54.4	502

NET ERROR

Error	Program-Wide Estimate ($ Millions)	Program-Wide Estimate (% of $ Awarded)[a]	Mean Error per Recipient ($)	Cases w/Error[b] (%)	Mean Error per Recipient w/ Error ($)
Institutional	134	4	47	30.0	158
Student	272	8	97	32.2	300
Overall	407	11	145	54.4	267

OVERAWARD ERROR

Error	Program-Wide Estimate ($ Millions)	Program-Wide Estimate (% of $ Awarded)[a]	Mean Error per Recipient ($)	Cases w/Error[b] (%)	Mean Error per Recipient w/ Error ($)
Institutional	260	7	93	18.4	504
Student	356	10	127	23.2	547
Overall	585	16	209	37.1	564

UNDERAWARD ERROR

Error	Program-Wide Estimate ($ Millions)	Program-Wide Estimate (% of $ Awarded)[a]	Mean Error per Recipient ($)	Cases w/Error[b] (%)	Mean Error per Recipient w/ Error ($)
Institutional	126	4	45	11.6	390
Student	84	2	30	9.1	328
Overall	178	5	65	17.5	369

[a] Amount of Pell awards is $3.6 billion for 1985-86.

[b] Error is defined as a discrepancy of plus or minus $50 from the best award.

EXHIBIT 3-1. A SUMMARY OF AMOUNTS AND RATES OF ERROR IN THE PELL GRANT PROGRAM, 1985-86

TABLE 3-1
APPROPRIATE COMPARISONS BETWEEN THE 1982-83
and 1985-86 PELL GRANT PROGRAM ERROR ESTIMATES*

	Program-wide Error ($ Millions)	Percentage of Dollars Awarded	Percentage of Recipients with Error
Academic Year 1982-83[1]	591(605**)	25 (25**)	49.7 (62.7**)
Academic Year 1985-86[2]	763	21	54.4

* Using a ± $50 tolerance
** These are error estimates using a ± $2 tolerance as originally done in the Pell Stage Three study.
1 Amount of Pell awards was $2.4 billion for 1982-83
2 Amount of Pell awards was $3.6 billion for 1985-86

error were also very similar; approximately one fourth were awarded in error in each of the studies.

The figures in Exhibit 3-1 indicate that payment error in the Pell Grant program affects approximately one-half of all students, with students contributing a larger share of error than institutions. These results are similar to the 1982-83 study, but represent a slight increase in the percentage of students with Pell Grant payment error.

In terms of program-wide error, there has been a slight positive change between the studies. The percentage of program funds awarded in error is 21 percent for the current study, a small decrease (4 percentage points) from the Pell Stage Three study. The percentage of recipients with error also remained similar - approximately one-half of Pell recipients have error for both the current and previous studies.

As part of the Title IV study we analyzed the marginal effects of student application items on Pell payment error. Exhibit 3-2 graphically displays the highest student errors by net payment error. Our analysis indicated the following:

- Other nontaxable income errors occurred in 7.1 percent of the Pell cases, accounting for $75.1 million in net error.
- Errors in home equity were slightly less frequent (6.5 percent of these cases) and caused $64 million in net payment error.
- While relatively infrequent, errors in adjusted gross income (AGI) were present in 3.4 percent of the Pell cases and accounted for $20.6 million in net error.

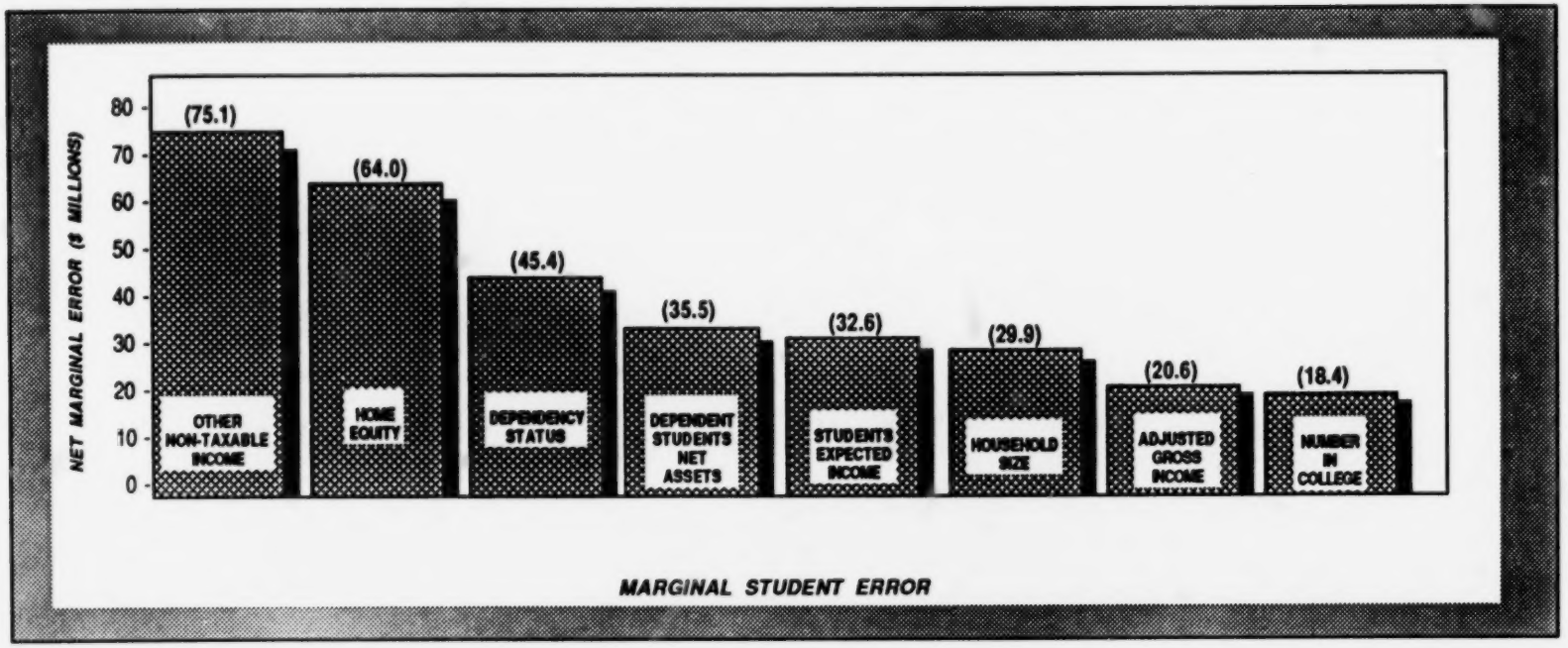

EXHIBIT 3-2. MARGINAL COMPONENTS OF STUDENT ERROR IN THE PELL GRANT PROGRAM, 1985-86

A useful measure in comparing the relative magnitude of errors between 1982-83 and 1985-86, because of the many changes that have transpired in the Pell program during the 3 years between Title IV Stage Two and Pell Stage Three, is ranks of net marginal error associated with application items. Table 3-2 shows that of the top 10 marginal errors for 1985-86, all were ranked in the top 11 in 1982-83. This shows that the application items which cause the highest net marginal errors in 1985-86 also caused the highest marginal errors in 1982-83 in spite of ED implemented corrective actions.

Pell institutional error can be separated into four components: enrollment status, cost of attendance, calculation, and categorical error. Exhibit 3-3 displays the highest institutional errors by net payment error. Our analysis of marginal institutional error indicated:

- Enrollment status errors were the most frequent, occurring in 18.2 percent of the cases, and accounted for $9.6 million in net error, but consisting of $110.5 million in overawards and $100.9 million in underawards.

- Cost of attendance error and calculation error occurred in 7.3 percent and 7.7 percent of the cases respectively. Cost of attendance errors totaled $8.3 million net, and calculation errors $3.7 million.

- Generally, categorical errors are an administrative problem that can be solved by obtaining additional documentation (financial aid transcripts, etc.). Most student award amounts will not change when this error is corrected (except awards to students who have a bachelor's degree). Nonetheless, these errors are a regulatory violation that must be corrected, although not of the same severity as some of the other types of error.

- Categorical errors (errors which cause a recipient to be categorically ineligible) occurred in only 4.1 percent of the cases, but accounted for $114.2 million in institutional payment error, all overawards. This is due to the fact that a categorical error makes the student's entire award an over-award.

TABLE 3-2
A COMPARISON OF RANKS OF THE IMPACT ON NET PROGRAM-WIDE PELL STUDENT ERROR FOR INDIVIDUAL APPLICATION ITEMS 1982-83 AND 1985-86

Item	Ranks 1985-86	1982-83
Other Nontaxable Income	1	2
Home Equity	2	5
Dependency Status	3	1
Dependent Student's Assets	4	6
Student's Expected Taxable Income	5	--
Household Size	6	3
Adjusted Gross Income	7	7
Number in College	8	4
Dependent Student's Income	9	8
Investment Equity	10	11
AFDC	11	12
Dependent's Nontaxable Income	12	--
Business/Farm Equity	13	15
Cash/Checking/Savings	14	16
Student's Expected Nontaxable Income	15	--
Educational VA Benefits	16	13
Dependent's Taxes Paid	17	--
Elementary and Secondary Tuition	18	19
Parent's Marital Status	19	14
Student's Spouse's Expected Income	20	--
Student's Marital Status	21	20
Mother's/Spouse's Earned Income	22	10
Medical Expenses	23	17
Father's/Student's Earned Income	24	18
Social Security Benefits	25	21
Federal Taxes Paid	26	9

EXHIBIT 3-3. MARGINAL COMPONENTS OF INSTITUTIONAL ERROR IN THE PELL GRANT PROGRAM, 1985-86

- The largest of the categorical errors were a missing Financial Aid Transcript (2 percent of the cases and $41.2 million in error), a missing Selective Service Compliance Statement (1 percent of the cases and $30.5 million in error), a missing Statement of Educational Purpose (0.7 percent and $28.1 million), and award to a student with a bachelor's degree (0.3 percent and $13.6 million).

All of these figures show error in the Pell program to be continually high, and a cause for concern. However, the pattern of institutional error is different from student error. Institutional error is more equal in terms of overawards and underawards, while student error is more overawards. This error pattern complicates corrective actions, and suggests that institutional error requires more management controls similar to institutional quality control procedures.

3.2 ERROR IN THE CAMPUS-BASED PROGRAMS

Exhibit 3-4 provides a summary of need error in the Campus-Based programs. Need error is a measure of the difference in need using best and reported data and does not necessarily translate into award error. (Error data on awards in excess of need and distributional errors are provided in detail in Findings.) The results indicate that absolute need error averaged $1,080 per recipient with error, and occurred in 77 percent of the cases. Overstatements of need are more prevalent than understatements of need, and result in $786 million in program-wide error, while understatements account for $282 million in program-wide need error. These are comparable to results from Stage One.

For instance, in the pilot phase (Stage One) approximately 70 percent of Campus-Based recipients had need error that totaled $978 million (absolute). The current figures are comparable to these results, and are the first true estimates of error in the Campus-Based programs based on the methodology tested in the pilot phase of this study. The slight increase in error in Stage Two may be attributed to an underrepresentation of error in Stage One due to changes in the study methodology.

Need error is important because it represents the degree to which financial aid packages are based on incorrect data. Some need error is so large that awards are made, erroneously, in excess of true need. In fact, awards in excess of true need were made for 22.5 percent of Campus-Based aid recipients and totaled an estimated $265 million.

Exhibit 3-4 decomposes Campus-Based need error into student and institutional errors. Student need error affects more than twice as many recipients as institutional need error (65 percent versus 32 percent). Mean error per recipient with error is $1,012 for student error and $877 for institutional error. Again, student error is much larger than institutional error. Program-wide error attributable to student error was over two times as high as institutional ($853 million versus $353 million). Clearly, student need error contributes a much larger percentage of absolute need error than institutional need error.

ABSOLUTE NEED ERROR

Error	Program-Wide Estimate ($ Millions)	Mean Error per Recipient ($)	Cases w/Error [a] (%)	Mean Error per Recipient w/ Error ($)
Institutional	353	276	31.5	877
Student	853	653	64.5	1,012
Overall	1,068	834	77.2	1,080

NET NEED ERROR

Error	Program-Wide Estimate ($ Millions)	Mean Error per Recipient ($)	Cases w/Error [a] (%)	Mean Error per Recipient w/ Error ($)
Institutional	100	78	31.5	249
Student	403	315	64.5	488
Overall	504	393	77.2	509

OVERASTATEMENTS OF NEED

Error	Program-Wide Estimate ($ Millions)	Mean Error per Recipient ($)	Cases w/Error [a] (%)	Mean Error per Recipient w/ Error ($)
Institutional	227	177	16.9	1,049
Student	619	483	42.4	1,139
Overall	796	614	49.7	1,236

UNDERSTATEMENTS OF NEED

Error	Program-Wide Estimate ($ Millions)	Mean Error per Recipient ($)	Cases w/Error [a] (%)	Mean Error per Recipient w/ Error ($)
Institutional	126	99	14.6	677
Student	216	169	22.0	767
Overall	282	221	27.6	799

[a] Error is defined as a discrepancy of plus or minus $50 from the best award.

EXHIBIT 3-4. A SUMMARY OF AMOUNTS AND RATES OF NEED ERROR IN THE CAMPUS-BASED PROGRAMS, 1985-86

Marginal student need error measures the effects of misreporting of application items on student need error. The marginal need error for an application item measures the need error removed if that item were independently verified. Our analyses indicated the following:

- Students' expected taxable income errors occurred in 16.1 percent of Campus-Based recipients and caused $114.8 million in net need error. This was followed by student's expected non-taxable income (8.9 percent, $114 million).
- Household size and number in college errors were also large. They occurred in 12.6 and 7.2 percent of the cases and accounted for $58.7 million and $26.5 million in net need error.
- AGI has a net marginal need error of $8.5 million in understatements. The absolute marginal need error for AGI is $74.7 million.

Campus-Based institutional error can be separated into seven components: factoring Pell awards, cost of attendance, EFC error, factoring GSL awards, initial overawards, disbursement, and categorical error. Our analyses indicated the following:

- Errors in factoring Pell awards (errors in including the correct amount of a students' Pell grant or estimated grant when calculating Campus-Based aid) occur the most frequently, almost 20 percentage points more than any of the other errors.
- Errors in factoring GSL awards were also significant. While these errors occurred in only 1.1 percent of Campus-Based cases, they caused $16.9 million in net need error.

3.3 ERROR IN THE GSL PROGRAM

GSL certification error occurs whenever the amount certified exceeds the difference between cost of attendance and the resources available to meet these expenses. Available resources would include known aid from

Pell, Campus-Based, and other programs and expected family contribution for students with adjusted gross incomes over $30,000. (The study was conducted prior to changes in the GSL program, which eliminated the exemption from need analysis for recipients with income of $30,000 or less.) Exhibit 3-5 presents a summary of overall GSL certification error.

Error estimates from Stage One in the GSL program are considerably different from estimates in the current study. There was a total of $441 million in certification error which averaged $1,215 for the 11 percent of the cases in error in Stage One. However, a significant methodological change was implemented for Stage Two; Expected Family Contribution (EFC) error was measured in Stage Two and had a significant impact on certification error.

In the GSL program, institutional certification error is higher for all measures than student certification error. Institutional error affects 14 percent of the certifications with error, while student error affects 11 percent. Institutional error accounts for $587 million in program-wide error; approximately one-third more than student error which accounts for $393 million in program-wide error. The mean error per certification with error was also about $175 larger per certification with error for institutional error ($1,238) than student error ($1,065).

The relatively high proportion of institution versus student error is probably due to the fact that application items used for the Pell and Campus-Based programs do not affect GSL certifications for applicants

PROGRAM-WIDE OVERCERTIFICATIONS				
Error	Program-Wide Estimate[a] ($ Millions)	Mean Error per Recipient ($)	Cases w/Error[b] (%)	Mean Error per Recipient w/ Error ($)
Institutional	587	167	13.5	1,238
Student	393	113	10.6	1,065
Overall	920	263	20.1	1,306

a Due to revision in the estimate of total GSL loan volume, these figures should be reduced by approximately 10 percent.

b Error is defined as a discrepancy of $50 from the best award.

EXHIBIT 3-5. A SUMMARY OF AMOUNTS AND RATES OF ERROR IN THE GSL PROGRAM, 1985-86

whose family AGI is $30,000 or less. For applicants reporting $30,000 or less in family AGI, significant student error can occur only if the actual family AGI is greater than $30,000. Family AGI and dependency status are the most meaningful application items to associate with student certification error. However, we did calculate marginal student errors even though there was no overcertification consequence in many cases. Our findings indicated:

- Among students who claimed to be independent, the student certification error rate was over five times as high for those who were actually dependent. In addition, the mean error was over twice as high for these students.
- Of the students who reported $30,000 or less in family AGI, just over 2 percent had family AGI in excess of $30,000. These students had a certification error 64 percent of the time.

GSL institutional certification error can be classified into seven mutually exclusive categories: factoring Pell awards, cost of attendance, EFC error, factoring Campus-Based awards, factoring other aid, initial overawards, and categorical error. Our analyses indicated the following:

- Errors made by institutions in computing EFC had the largest impact on certification error. Three possible areas where institutions can make mistakes in computing the EFC to use in the GSL program are: use of an EFC different from the EFC used in awarding Campus-Based aid, failure to use the GSL Tables properly, or incorrect determination of whether family adjusted gross income is over or under $30,000.
- Failure to use the GSL Tables had the largest impact on EFC error. In almost one-fourth of the cases where the GSL Tableswere used to calculate EFC, there was a certification error.
- Categorical errors were present in 1.3 percent of the certifications, and totaled $142.8 million.

- Initial overawards were a significant source of institutional error, occurring in 3.3 percent of the cases and $130 million in overcertifications.

- Errors in factoring other aid were present 2.2 percent of the time and caused $41.5 million in overcertifications.

In conjunction with errors in factoring other aid, initial overawards indicates institutional problems in identifying and coordinating all sources of aid received. Errors in factoring Pell awards and Campus-Based aid demonstrate the interaction between programs where errors in one program affect the eligibility for another. Errors in factoring Pell awards were a problem in GSL just as they were for the Campus-Based programs.

3.4 ANALYSIS OF ERRORS IN THE TITLE IV PROGRAMS

We analyzed the relationships between student and institutional characteristics and the prevalence of aggregate error in the Pell, Campus-Based, and GSL programs. We tried to identify characteristics that were associated with error so that we could develop corrective actions. Our initial analyses indicated several characteristics of students that were associated with either increased or decreased student error in one or more of the programs. In addition, we found a group of institutional characteristics to be significantly associated with student or institutional error in one or more of the programs.

We further analyzed these characteristics using multivariate techniques to develop corrective actions. After using these multivariate techniques to control for other variables, several of the characteristics

were no longer significant in some of the programs for which they were previously determined to be significant. None of the characteristics remained significant across all programs.

These analyses suggest that error occurs in very complex, intertwined, and perhaps even contradictory patterns. There is no one-dimensional profile of the error-prone student or the error-prone institution. This is one reason why mechanical, quick-fix corrective actions remove only a portion of error, but are not able to reduce the more deeply imbedded causes of error.

3.5 VALIDATION AND INSTITUTIONAL QUALITY CONTROL

This section presents the analysis and conclusions concerning the extent and effectiveness of two primary dimensions of quality control in the Title IV programs: validation of student application data and institutions' quality control procedures used to control institutional error in the student aid programs. Analysis of validation focused on the extent of activities and the effectiveness of validation in removing error among Title IV recipients selected for validation by the Pell Processor, those selected by institutions, and compares these recipients with those not selected for validation for each Title IV program.

We found validation in the Pell program to be quite extensive. Our findings indicated:

- Validation activities in the Pell program occurred for 80 percent of all Pell recipients.

- Students selected for validation by the Pell Processor had the highest rates of error on their initial applications for the six data items mandated for validation. After validation the remaining error in these items was not much different for Pell selected, institution selected, and non-selected students.

- The Pell Processor does relatively well selecting recipients prone to making errors on the six data items required to be validated. However, the discrepancies found in these six data items are not the predominant contributors toward payment error. Neither the Pell Processor nor institutions do well in selecting students prone to making errors in the other application items. As such, neither do well identifying applications that result in higher than average absolute payment error. This is especially true of applications that result in overawards.

- Institutions do a good job of removing potential error through validation. Recipients with potential payment error after their first transaction had reductions in potential error of $164 per recipient, or $85 million, for Pell selected and $125 per recipient, or $43 million, for institution selected recipients.

- After validation, error still remains high. Pell selected recipients had $161 error per student, institution selected recipients had $127 error per student, and non-selected students had $207 error per student by the time final awards were made. Thus, while effective in removing some level of error, corrective actions in addition to validation are needed if there is going to be substantial progress made in reducing error in the Pell Grant program.

Findings concerning validation in the Campus-Based programs were similar to those in the Pell program. Our findings indicated:

- Validation activities in the Campus-Based programs were about as extensive as in the Pell program (73 percent) and increased between 1983-84 and 1985-86 in terms of both recipients selected by the Pell processor and those selected by institutions.

- Recipients receiving aid from multiple programs (e.g., Pell and Campus-Based) were more likely to be selected for validation by institutions than were recipients of only Campus-Based awards.

- Campus-Based recipients selected by the Pell Processor for validation have the lowest rates of student need error (55.2 percent).

- All validated cases have lower item discrepancy for adjusted gross income, although institution selected validation is not successful at reducing item discrepancy in general.

Finally, our findings concerning validation in the GSL program were noticeably different than the Pell and Campus-Based programs. Validation in the GSL program was relatively rare, and in general, our findings indicated:

- Institutions selected Campus-Based and GSL recipients for validation at a higher rate (67.9 percent) than recipients receiving only a GSL (45.5 percent).

- Institution selected GSL recipients had an estimated 34.5 percent overcertification error rate as compared to 28.7 percent and 27.7 percent error rates for Pell selected and not selected respectively.

Institutional Quality Control Analyses

We analyzed the extent and effectiveness of institutional quality control (QC) procedures, to assess what quality control procedures institutions used, how often the procedures were employed, and what follow-up procedures an institution used after correcting an identified problem.

The use of QC procedures varied a great deal across institutions by type and control. Both 2-year public institutions and proprietary institutions relied upon manual or auxiliary QC procedures (e.g., checking with other offices, interviewing students, using internal audits

and auditors, and using consultants) while 4-year public schools made predominant use of automated and sampling procedures (selecting students at random, and using the sample to confirm the validity of specific data items). Two year, and 4-year private schools predominantly used sampling and sampling in conjunction with either manual QC procedures or other auxiliary QC procedures, respectively.

In the Pell Grant program, recipients attending institutions that used QC procedures that involved sampling had the lowest institutional error rates (19 percent), while recipients at institutions with little or no QC had the highest institutional error rates (38.5 percent). Recipients at schools using automated and sampling procedures had the lowest rate of institutional Campus-Based need error. Recipients attending schools with little or no QC had the highest rates of institutional Campus-Based need error. One minor difference from the results in the Pell program is that recipients at institutions using mixed types of QC followed those in the automated/sample category in having the lowest rate of institution Campus-Based need error.

In general, these findings indicate that error in the Title IV programs continue to be high. The fact that validation and institutional quality control procedures were associated with lower error rates in many cases suggests that these are viable options that should be explored further for possible corrective actions.

4.0

CORRECTIVE ACTIONS

The ultimate purpose of the Department of Education's (ED's) quality control studies is to reduce error and improve the quality of the Title IV programs. An important component in ED's quality improvement strategy is the analysis and implementation of corrective actions. This section reports on the corrective actions analyzed in the Title IV QC study.

4.1 CORRECTIVE ACTIONS FRAMEWORK AND STRATEGY

As part of its corrective actions strategy, ED has conducted numerous quality control studies of the student financial aid programs. Consistently, these studies have found quality problems to be a major concern for each of the programs. Because error has been pervasive at all levels (item-level as well as system-wide), it is necessary to examine four different levels of corrective actions. These four levels are corrective actions aimed at errors in individual data items or individual components of the delivery systems, corrective actions for groups or classes of similar data items or components of the delivery systems, corrective actions based on changes in strategic approaches to improving quality, and corrective actions aimed at major problems in the programs that involve structural changes in the delivery system.

Previously each of these types of corrective actions has been determined to have merit. Therefore, the current study and investigation of corrective actions examined corrective actions at each level. These levels are differentiated as follows:

- Level I corrective actions are designed in response to significant errors in individual data items or individual components of the delivery system, often as short-term measures. Many Level I corrective actions have been undertaken. (These include changes in the items included in validation activities and increasing the proportion of recipients selected for validation.) Additional actions are possible, but will not bring down error rates in a lasting and cost-effective manner. These corrective actions rely on costly, after-the-fact inspection methods, and Congress has constrained ED in these areas. Validation is occurring in 80 per cent of Pell Grant cases already. Therefore little more can be expected through added validation. Nor would changes in procedures used to validate data be likely to have a major impact on error reduction. Analysis of various validation procedures did not indicate differences in their ability to remove error.

- Level II corrective actions are those oriented towards groups or classes of data items, or types of components of the delivery system. Many Level II corrective actions have also been undertaken. While additional Level II corrective actions can be undertaken, the nature of them makes them costly and of questionable effectiveness in the long run.

- Level III corrective actions are those that constitute a shift in the approach to quality. Some Level III corrective actions are under investigation, but management decisions on full-scale implementation or expansion are needed.

- Level IV corrective actions are those that are longer-term and involve major, in many cases structural, changes in the delivery systems or the Title IV programs. At this point, Level IV corrective actions have not been targeted for implementation, and there is no long-term plan in place for developing them.

By their very nature, Level I and Level II corrective actions tend to be oriented towards liability-type errors, while Level III and Level IV corrective actions focus on aspects that transcend liability errors and focus more on the overall quality of the delivery system.

ED faces a decision whether to maintain the status quo or to mobilize for change to significantly improve the quality of the Title IV delivery systems. ED must either live with the current levels and rates of error, since most mechanical fixes have been exhausted, or take bold steps to restructure the delivery system itself, including focusing on results-oriented procedures rather than prescriptive, process-oriented ones.

4.2 CORRECTIVE ACTIONS FOR SIGNIFICANT STUDENT AND INSTITUTIONAL ERRORS

The corrective actions presented in this section fall in the Level I category and are aimed at individual student application data items and institutional procedures.

A significant percentage of misreporting of home equity, savings, dependent student's assets, and other non-taxable income was found to be due to erroneously reporting a zero value for these data items. Of the applicants who reported zero for the following items, those who reported a zero value incorrectly are as follows:

Parent's home equity	15.4%
Independent student's home equity	6.5%
Parent's savings	37.3%
Independent student's savings	28.7%
Dependent student's assets	31.3%
Other non-taxable income	21.6%

The problem of erroneously reporting zero is occurring in items for which values could be cross-checked on the Federal tax form filed by the applicant or his/her parent(s). While none of the values of these items can be obtained directly from the tax return, values on the tax return can indicate situations where a data item exists when none was reported on the application. Therefore, using the Federal tax form as a source of information to determine when values should be verified -- as opposed to using the form for verifying the amount of the values -- should be investigated by ED.

In addition, changes in application forms and clarification of instructions could improve the accuracy of several data items, including other non-taxable income, household size, and number in college.

Our analyses indicated that the majority of errors in household size and number in college do not occur because unforseen circumstances cause students' estimates of these values to change after they apply for aid. Of the recipients whose reported household size was less than their best household size, 70.4 percent did not have an unanticipated change in their household size. Of those whose reported household size was greater than best, 60.4 percent had no unanticipated change. Similar figures exist for number in college. Of those recipients whose reported number in college was less than best, 77.4 percent had no unanticipated change, and 59 percent of those recipients whose reported number in college was greater than best had no unanticipated change.

Enrollment status errors in the Pell program suggest that institutions have problems calculating enrollment status correctly for non-standard students. Institutions seem to have trouble adjusting a student's enrollment status for summer sessions, and making adjustments when other changes in enrollment status occur. Also problematic is calculating enrollment status for clock-hour students. These factors suggest that ED may want to issue clarifications concerning determining enrollment status for non-standard students. In addition, ED may want to investigate changing the procedures for determining, and adjusting, enrollment status during summer sessions and for clock-hour students.

A subset of procedural or calculation errors appeared to be disproportionally distributed at a few institutions. For these institutions, sampling a relatively small group of recipients would uncover the occurrence of these systematic problems. Therefore, ED could investigate the characteristics of these institutions by drawing institution samples. ED may wish to design a sample in its audits of institutions that would indicate if institutions are having systematic problems with these items. Alternatively, ED could issue technical assistance or clarification concerning the problems in these items either through professional associations or through its own channels.

4.3 PROSPECTIVE INCOME DATA

Two Level II corrective actions were analyzed as part of this study. The first of these was an analysis of the effects of redefining

the group of prospective income data items. Recent changes made by Congress in the Title IV programs do not allow for prospective income data to be used in determining either awards in the Pell Grant program or need in the Campus-Based programs, except for dislocated workers. Our analyses of the likely effects of this change in the Pell and Campus-Based programs produced the following findings:

- The distribution of Campus-Based need using base year income data will be substantially different than the distribution using prospective income data.
- The move to base year income data will cause a decrease in total need in the Campus-Based programs.
- Independent students' need error rate in the Campus-Based programs, attributable to income, using base year data are less than half of the error rates using prospective data (24.7 percent vs. 66.2 percent).
- Fewer than 20 percent of Pell recipients are affected by the change to base year income data (not including Special Condition filers).
- The current method of selecting which Pell recipients should have their awards based on prospective income is in error approximately 29 percent of the time (15.7 percent of Pell recipients use prospective income when they should not and 13.1 percent do not use it when they should).
- The change affects Pell recipients with low awards the most. Nearly half of those becoming ineligible had awards of less than $750.
- Dependent students' error rate in the Pell program, attributable to income, using base year data declines approximately 25 percent (from 16 to 12 percent).

Because error decreases substantially when using base year data and therefore aid is more likely to go to those who truly need it, this change is likely to be judged favorably in spite of causing a decrease in total need for Campus-Based funds.

4.4 REDEFINED DEPENDENCY STATUS

The second Level II corrective action analyzed was the changes made in the data items used to determine dependency status. Beginning in the 1987-88 academic year, a redefined set of data elements and rules will be used to determine the dependency status of applicants for Title IV aid. We analyzed this change to determine the likely impact of the redefined regulations and to identify ways in which the rules could be modified to achieve improved results.

- In the aggregate, there is no change in the distribution of independents and dependents between the current and redefined dependency status regulation. An estimated 14 percent of recipients change dependency status under the redefined model, 7 percent going from independent to dependent and 7 percent from dependent to independent. Recipients who are 22 or 23 years old are the most likely to change dependency status under the new definition.

- The percentage of recipients reporting as independents who should have been dependents is lower under the new definition, but the percentage of recipients reporting as dependents who should have been independent is higher. Thus the error rate of dependency status error is not greatly affected by the new definition.

- We recommend that the self-sufficiency criteria be expanded in the new definition (i.e., all or most students should be required to meet the self-sufficiency criteria). This will help minimize the effect of students changing dependency status simply because of the new definition. Modifying the new definition to expand the scope of the self-sufficiency criteria greatly reduces the problem of recipients who are dependent under the current model becoming independent under the redefined model. The modification does, however, cause a number of current independents to become dependent under the redefined model.

4.5 INSTITUTIONAL QUALITY CONTROL AND VALIDATION

A key component of the corrective action analyses and recommendations were our analyses of institutional quality control procedures and validation of student data. These are analyses of Level III corrective actions. We analyzed data in these areas to determine what types of QC procedures were most effective in controlling institutional error, and if any validation-related procedures were associated with increased effectiveness of validation. Our analyses indicated the following:

Institutional Quality Control Procedures

- Institutional quality control procedures were generally associated with lower rates of institutional error in the Pell and Campus-Based programs.
- Sampling-based QC procedures were associated with lower rates of error more often than other QC procedures. Students at institutions that used sampling-based QC procedures had institutional error 19 percent of the time, while students at institutions with little or no QC had institutional errors 38.5 percent of the time.
- Higher levels of either professional or clerical/data entry staff and higher levels of automation were, for the most part, not significantly associated with lower rates of institutional error.
- These findings support continued development of the Institutional Quality Control Pilot Project and similar activities. In addition to the Pilot, materials and information concerning quality control procedures could be developed as technical assistance materials for institutions not participating in the Pilot.

Validation

- Pell selected cases have a higher probability of having a student error removed than not selected cases.
- Institutional selected cases also have a higher probability of having errors removed than not selected cases. This difference, however, is not statistically significant (i.e., it could have occurred due to sampling error).
- Validation-related procedures that could be used in designing corrective actions were not significant in explaining differences in error removed through validation.

As we have previously stated, about 80 percent of Pell Grant recipients are already undergoing some type of validation. Further improvements in error reduction will therefore not come from validating more students. Additionally, there do not appear to be better validation-related procedures that could be recommended to improve the institutions' ability to reduce error. Therefore, the most likely avenue for improvement in validation is through better techniques for targeting applications and data items for validation.

4.6 SIMPLIFICATION OF THE DELIVERY SYSTEM

The findings from numerous quality control studies, and a pervasive perception that student aid in general, and the formulae used to determine eligibility and need for Federal financial aid funds in particular, are too complex, has led to a widespread interest in simplifying these formulae. In Stage One of the current study, ED conducted a multifaceted assessment of Pell simplification which focused on equity and quality issues.

Simplification involves many aspects other than just the formulae. Also included are simplifying the structure of the delivery system itself, as well as changing the focus of quality assurance activities from process-oriented activities to results-oriented requirements. Targets for simplification include deregulation, focusing on collections and default rates rather than procedural requirements, redirecting due diligence procedures to results and allowing schools to develop their own methods, and integrating more procedures and regulations across all of the Title IV programs.

For this study, we analyzed the effects of reducing the number of data elements used in the Uniform Methodology (UM) formula. The UM formula is used to determine a student's Expected Family Contribution (EFC) in the Campus-Based programs. For our analyses we truncated the UM formula to six items: dependency status, AGI, U.S. taxes, other non-taxable income, household size, and number in college. This truncation was based on the same criteria used in developing a reduced data element formula for Pell in Stage One, namely budget impact, aggregate distributional impact, sensitivity, reliability, and verifiability. Our analyses indicated the following:

- The distributions of need in the Campus-Based programs and certification in the GSL programs resulting from the reduced formula closely approximate the intended distributions. (Intended distributions are those that would have occurred had accurate data and procedures been used to distribute aid under current formulae and regulations).

- Most recipients have minimal changes in their Campus-Based need and GSL certification under the reduced formula.

- **Student error in the Campus-Based and GSL programs is significantly lower under the reduced formula.**

- **Adjusting aspects of the truncated formula (e.g., including additional items, eliminating some, changing how the items are used in the formula, etc.) could improve on the accuracy and distribution of the reduced formula.**

Shortening the UM formula shows promise in increasing the accuracy and efficiency of determining need in the Campus-Based programs. The distribution of need under a reduced formula overcomes to a degree the distortions from the intended distribution caused by student reporting error. Equity is improved by removing errors that undercut that very objective. Thus, simplification will help ED achieve the objectives of the programs through a delivery system that is less vulnerable to fraud, waste, and abuse and without undercutting the distribution of aid to the most needy recipients. The distribution of need under the reduced formula appears especially attractive since the target group of recipients, those in the lowest income groups for independent and dependent recipients, gain slightly in amount of need, relative to the other income groups.

Furthermore, because the amount of need recipients have under the two models is nearly the same over 60 percent of time, and the amount of student need error under the reduced formula decreases dramatically, the possibility of the reduced formula achieving its goals is significant. The ultimate reduced formula might not take the same form or have the same data elements as the reduced formula used for these analyses.

The effects on the GSL program suggest that reducing the UM formula has promise in increasing the accuracy of determining certifications in the GSL program too. The distribution of certifications under the reduced formula approximated the intended distribution very closely. In addition, the effects on certification for both graduate and undergraduate students is such that most students receive nearly the same certification under the reduced formula. Finally, GSL student error under the reduced formula is significantly lower than under the full formula.

4.7 CONCLUSIONS

The results of analyses of findings and corrective actions indicate that ED now faces a critical decision in improving the quality of the Title IV delivery system. Error continues to be high in spite of corrective actions already taken. Yet the corrective actions ED has taken have nearly exhausted the options for using mechanical approaches to reducing error in individual data items. ED must either accept error rates of the magnitude that currently exist, by relying on costly after-the-fact inspection techniques, or accept the challenge of restructuring the delivery system itself to design error out of the process. In order to do this, ED must establish goals and targets as part of a larger quality improvement strategic plan including the prevention of error through results-oriented requirements. Two other major analyses are being conducted as part of this long-term plan. One

is embodied in a paper, developed under this contract, entitled Delivery System Quality Improvements. The second is a study which will address lender and guarantee agency quality, and propose corrective actions, which will soon be issued.

This study and previous studies have shown that some of the very data on which billions of taxpayer dollars are being disbursed are vulnerable to error, and can only be improved through redesign of the delivery system. This approach will require clear commitment from all interested parties and internal management. Unless ED is willing to accept error rates and magnitudes of the current level, redesign of the Title IV delivery system must be undertaken.

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